Annual Report of Operations for Year 2017

To comply with NPDES General Permit No. WAG130000 for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country within the Boundaries of the State of Washington

NPDES # for your Facility:

WAG-13-0017

Facility & Owner Information

Facility Name:
Skookum Creek Fish Hathcery

Operator Name (Permittee):
Lummi Indian Business Council

Address:

Physical Adress:
6498 Saxon Rd
Acme, WA 98220

Lummi Indian Business Council
2665 Kwina Road
Bellingham, WA 98226

Email:

Phone:
360-595-2142

Owner Name (if different from operator):

Email:

Phone:

Best Management Practices (BMP) Plan

Has the BMP Plan been reviewed this year? ☐ Yes ■ No

Does the BMP Plan fulfill the requirements of the General Permit? ■ Yes ☐ No

Summarize any changes to the BMP Plan since the last annual report. Attach additional pages if necessary.

Operations and Production

Total harvestable weight produced in the past calendar year in pounds (lbs):	102,271
Pounds of food fed to fish during the maximum month:	14,508

List the species grown or held at your facility and the annual production of each in gross harvestable weight. If fish were released rather than harvested, list the weight at time of release.

Species	Fish Produced	Receiving Water(s) to which Fish were Released	Month Released/ Spawned
Yearling Coho Salmon	85,813 lbs	Southfork Nooksack River	May
0 Age Chinook Salmon	16,458 lbs	Southfork Nooksack River	May-June

Fill in the table below with production numbers from the past year. List the **maximum** amount of fish on-site and the maximum amount of food fed **per month**.

Month	Total Fish (lbs)	Fish Feed (lbs)	Month	Total Fish (lbs)	Fish Feed (lbs)
January	48,411	1,401	July	24,343	8,984
February	52,114	3,208	August	33,187	4,224
March	71,166	11,050	September	34,859	1,672
April	88,851	14,508	October	42,858	6,688
May	113,956	12,421	November	49,546	3,168
June	13,120	1,956	December	52,538	2,992

Additional Comments:

Solid Waste Disposal

Describe the solid waste disposed of during the calendar year (including fish mortalities).

Type of Solid Disposed	Date Disposed	Location Disposed
Fecal Waste	Late June	Upland Disposal Site
Juvenile Mortalities	Daily (or as needed)	Septic System
Adult Carcasses	Weekly (August-December)	Food bank or Crab Bait
Additional Comments:		

Fish Mortalities

Include a description and the dates of mass mortalities in the past year (more than 5% per week). Attach additional pages, if necessary. Include total mortalities from all causes.

Date	Cause of Deaths	Steps Taken to Correct Problem	Pounds of Fish
N/A	N/A	N/A	N/A
Additional Comments: No mass mortality events.			

Noncompliance Summary

Include a description and the dates of noncompliance events (including spills), the reasons for the incidents, and the steps taken to correct the problems. Attach additional pages, if necessary.

No noncompliance events were recorded.

Inspections & Repairs for Production & Wastewater Treatment Systems

Date Inspected	Date Repaired	Description of System Inspected and/or Repaired
Monthly	N/A	Abatement system, vaccum systems, waste drainlines
Weekly or Monthly	N/A	Water delivery lines, drain lines, Fish ladder, and valves

Aquaculture Drugs and Chemicals

Please indicate whether you used each drug/chemical **during the past calendar year**.
Describe the use of each drug/chemical in more detail on the following pages.

Used in the past year?	Drug or Chemical
☐ Yes ☒ No	Azithromycin
☐ Yes ☒ No	Chloramine-T: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Chlorine
☐ Yes ☒ No	Draxxin
☐ Yes ☒ No	Erythromycin - injectable
☐ Yes ☒ No	Erythromycin - medicated feed
☒ Yes ☐ No	Florfenicol (Aquaflor)
☐ Yes ☒ No	Formalin - 37% formaldehyde: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Herbicide - describe:
☐ Yes ☒ No	Hormone - describe:
☐ Yes ☒ No	Hydrogen Peroxide: ***See additional reporting requirements on page 7***
☒ Yes ☐ No	Iodine: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Oxytetracycline
☐ Yes ☒ No	Potassium Permanganate: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Romet
☐ Yes ☒ No	SLICE (emamectin benzoate)
☒ Yes ☐ No	Sodium Chloride - salt
☐ Yes ☒ No	Vibrio vaccine
☐ Yes ☐ No	Other:
☐ Yes ☐ No	Other:

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Ovadine		Generic Name: Buffered PVP Iodine (Flow-Through)	
Reason for use: Control and prevention of *Saprolegnia*			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment (specify units):	Total quantity of formulated product used in past year (specify units): Approximately 151 liters	
Date(s) of treatment: Mid-September to Late November, daily			Total number of treatments in past year: Approximately 45
Maximum daily volume of treated water: 737,280 liters	Treatment concentration (specify units): 100ppm	Duration and frequency of treatment(s): Target duration of 10 minutes twice per day.	
Method of application:	☐ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: Please note calculations are for absolute worst-case situation that is not necessarily a realistic scenario. See attached calculation spreadsheet for more information and explanation.			

Brand Name: Aquaflor		Generic Name: Florfenical	
Reason for use: Treatment of bacterial cold water disease			
☐ Preventative/Prophylactic ■ As-needed	Total quantity of formulated product per treatment: 147/153kg	Total quantity of formulated product used in past year (specify units): 300 kg	
Date(s) of treatment: Febuary 18-27, 2017 and March 30- April 8th, 2017			Total number of treatments in past year: 2
Maximum daily volume of treated water: 2,271.25 liters/min	Treatment concentration (specify units): 10mg per 1 kg feed	Duration and frequency of treatment(s): 2 10 day treatments	
Method of application:	☐ Static Bath ☐ Flow-through	■ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	■ Raceways ☐ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Flow-Through Treatments	
Tank Volume	267.4L and 13.2L (IODINE) Liters
Calculated Flow Rate	34 lpm 15 lpm Liters/Minute
Duration of Treatment	Approximately 10 minutes Minutes
Desired Flow-Through Treatment Concentration of Product	100,000 µg/L
Amount of Product to Add Initially	0.2L or 0.1L Liters Product
Amount of Product to Add During Treatment	200mL or 100mL mL/Minute
Total Volume of Product Needed	0.2L or 0.1L Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.00035ppm Active Ingredient: 140ppb Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	16,639,156 liters/day Specify Units
Maximum % of Facility Discharge Treated	1.25% % of Total Discharge

Changes to the Facility or Operations

Describe any changes to the facility or operations since the last annual report.

Signature and Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly evaluate and gather the information submitted. Based on my inquiry of the person or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Merle Jefferson	LNR Director
Printed name of person signing	Title
Merle Jefferson	1/29/18
Applicant Signature	Date Signed

Submittal Information

Send the complete, signed information, along with any attachments, to the following address:

U.S. EPA Region 10, OWW-191

Washington Hatchery Annual Report

1200 Sixth Avenue, Suite 900

Attachment 1 - Calculations for Skookum Creek Hatchery PVP Iodine

Calculations for Flow-Through

Incubator Type	# Incubators	Water Flow per Incubator		Incubator Volume (L)	Turnover Rate (min) [x8 for Heath]	Treatment Volume (L)	Total Incubation Effluent (LPM)	Total Treatment Volume (L)	Instantaneous % Iodine in Incubation Effluent	Total Hatchery Effluent (LPM)	% Instantaneous Iodine in Hatchery Effluent	% Iodine in Effluent over 10 Mins	Instantaneous Active Iodine in Effluent (L)
		GPM	LPM										
Nopad	8	9	34	267.4	7.86	0.2	272	16	5.88%	11,554	0.00138	0.000138	0.0000138
Heath Stacks	16	4	15	9.46	5.05	0.1	240	1.6	0.67%		0.00014	0.000014	0.0000014
Total							**512**	**17.6**	**6.55%**			**0.000152**	**0.0000152**

Calculations for Required Treatment Volume

Incubator Type	Incubator Volume (L)	Influent Flow (Lpm)	Influent Flow (LPH)	Turnover (hr)	Target 100ppm (ratio)	Desired Exposure Duration (min)	L Iodine Required (LPH/target ppm)
Nopad	267.4	34	2040	0.131	10000	10	0.204
Heath Tray	9.46	15.14	908.4	0.010	10000	10	0.09

Note: The effluent calculations are based upon a worst case scenario where **all** incubators are filled and requiring treatment at the same time. In reality, this is not realistic due to the timing differences of spawning for spring chinook and coho. I felt that breaking down the treatments on a realistic schedule would be difficult for me to calculate and highly confusing for anyone evaluating the calculations due to 2 incubators types and 2 different purposes for treatment.